

REMARKS

Claims 1-4, 6 and 7, all the claims pending in the application, stand rejected. Claim 1 is amended. New claims 8-11 are added.

The amendments to claim 1 are clearly supported by the description of page 14, lines 2-4 of the original specification.

New claim 8 is clearly supported by the description at page 5, lines 21-28 of the original specification. New claim 9 is clearly supported by the description at page 11, lines 6-12 of the original specification. New claim 10 is clearly supported by the description at page 13, lines 2-3 of the original specification. New claim 11 is clearly supported by the description at page 14, lines 5-6 of the original specification.

Claim Rejections - 35 USC § 103

Claims 1-2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (U.S. PGPub 2002/0064606) in view of Veerasamy et al (U.S. Patent 5,858,477). This rejection is traversed for at least the following reasons.

The Examiner repeats the basis for rejection from the previous Office Action and addresses Applicants' four arguments for patentability over the references. Claim 1 has been amended in reply.

Claim 1

According to the present invention, as defined by amended claim 1, there is provided a method of producing a magnetic disk for use in a magnetic disk apparatus of a load/ unload system, comprising:

forming at least a magnetic layer on a disk substrate, and

thereafter forming a carbon-based protection layer by plasma CVD using a mixed gas of a hydrocarbon-based gas and a nitrogen gas without containing an inactive gas under the condition that the disk substrate with the magnetic layer formed thereon is kept at a temperature higher than 200°C,

wherein a content of the nitrogen gas with respect to the hydrocarbon-

*based gas falls within a range between 0.5% and 6%, and
wherein after forming the carbon-based protection layer, a surface of the
magnetic disk is cleaned with ultra pure water and isopropyl alcohol.*

According to the present invention as recited in amended claim 1, after forming the carbon-based protection layer, a surface of the magnetic disk is cleaned with ultra pure water and isopropyl alcohol, as taught at page 14. Consequently, the surface quality of the disk can further be improved. This is a feature of the present invention recited in the claim 1.

The cited references fail to disclose this feature of the present invention recited in the amended claim 1. Accordingly, the present invention recited in the amended claim 1 is patentable over the cited references.

Claims 2, 6 and 7

These claims would be patentable for the reasons given for claim 1, due to their dependency from claim 1.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (U.S. PGPub 2002/0064606) in view of Veerasamy et al (U.S. Patent 5,858,477) and further in view of Suzuki et al (U.S. Patent 6,680,112. This rejection is traversed for at least the following reasons.

Claim 3

With regard to Claim 3, the Examiner asserts that the claim limitations are met by Sakaguchi et al in view of Veersamy et al, except for exposing the carbon-based protective layer to nitrogen plasma after forming the carbon-based protection layer. The Examiner asserts that Suzuki et al teaches this limitation.

However, Suzuki et al does not remedy the deficiencies of Sakaguchi et al in view of Veersamy et al in that it does not teach forming the carbon-based protection layer, a surface of the magnetic disk is cleaned with ultra pure water and isopropyl alcohol.

Claim 4

With regard to Claim 4, the Examiner asserts that the claim limitations are met by Sakaguchi et al in view of Veersamy et al and further in view of Suzuki et al.

However, Suzuki et al does not remedy the deficiencies of Sakaguchi et al in view of Veersamy et al in that it does not teach forming the carbon-based protection layer, a surface of the magnetic disk is cleaned with ultra pure water and isopropyl alcohol.

New Claims

Claim 8

According to new claim 8, which depends from claim 1, a part of hydrocarbons that are decomposed in plasma form a chemically active carbon-nitrogen bond to form the carbon-based protection layer. The remaining part of the hydrogen carbons that is not decomposed or insufficiently decomposed in the plasma is incorporated to form the protection layer.

The cited references of Sakaguchi et al in view of Veersamy et al and further in view of Suzuki et al. fail to disclose this feature of new claim 8. Accordingly, new claim 8 is patentable over the cited references.

Claim 9

According to new claim 9, which depends from claim 1, a thickness of the carbon-based protection layer is not smaller than 1 nm and is not greater than 5nm.

The cited references of Sakaguchi et al in view of Veersamy et al and further in view of Suzuki et al. fail to disclose this feature of new claim 9. Accordingly, new claim 9 is patentable over the cited references.

Claim 10

According to new claim 10, which depends from claim 1, the disk substrate has a thickness between 0.1 mm and 1.5 mm.

The cited references of Sakaguchi et al in view of Veersamy et al and further in view of Suzuki et al. fail to disclose this feature of new claim 10. Accordingly, new claim 10 is patentable over the cited references.

Claim 11

According to new claim 11, which depends from claim 1, the surface of the magnetic disk has a surface roughness R_{max} of 6 nm or less.

The cited references of Sakaguchi et al in view of Veersamy et al and further in view of Suzuki et al. fail to disclose this feature of new claim 11. Accordingly, new claim 11 is patentable over the cited references.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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